

CLAIMS

1. A system for providing redundancy for an entity in a telecommunications network, the system comprising:

a first network entity adapted to send and receive traffic; and

a second network entity configured to operate as a standby network entity, wherein the second network entity takes control of only a portion of the functions of the first network entity in response to a partial failure in the first network entity.

2. The system for providing redundancy for an entity in a telecommunications network in claim 1, wherein the first network entity has a plurality of cards for performing various functions, and a partial failure occurs in a first type of card of the first network entity.

3. The system for providing redundancy for an entity in a telecommunications network in claim 2, wherein the second network entity has at least the first type of card and wherein the first type of card of the second network entity performs functions for the first type of card in the first network entity in response to its partial failure.

4. The system for providing redundancy for an entity in a telecommunications network in claim 1, wherein the first network entity is in a first location and the second network entity is in a second location that is geographically remote from the first location.

5. The system for providing redundancy for an entity in a telecommunications network in claim 1, wherein the first network entity further comprises:

a system and administration module for transmitting a primary status message over a first network to the second entity and a secondary status message over a second network to the second entity.

6. The system for providing redundancy for an entity in a telecommunications network in claim 5, wherein the first network is an IP network and wherein the second network is a signaling network.

7. The system for providing redundancy for an entity in a telecommunications network in claim 6, wherein the second network entity takes control of only a portion of the functions of the first network entity in response to a failure to receive either the primary status message over the first network or the secondary status message over the second network.

8. A method for providing redundancy for an entity in a telecommunications network, the method comprising:

detecting that a first call server has become partially or completely disabled; and
redirecting at least a portion of traffic from the first call server to a second call server in a geographically remote location.

9. The method of claim 8, wherein the step of detecting that a first call server has become partially or completely disabled comprises:

transmitting a status message over a first type of network by the first call server to the second server with information that a partial failure has occurred in a first specific type of card in the first call server.

10. The method of claim 9, wherein the step of redirecting traffic comprises:

informing other cards in the first call server to redirect messages for the first specific type of card in the first call server to an address for a second specific type of card in the second call server.

11. The method of claim 8, wherein the step of detecting that a first call server has become partially or completely disabled comprises:

failing to receive a primary status message from the first call server over a first network after a first time period;

failing to receive a secondary status message from the first call server over a second network after a second time period; and

determining that the first call server has become completely disabled.

12. The method of claim 11, wherein the step of redirecting at least a portion of traffic from the first call server to a second call server comprises the steps of:

initiating a switchover process to the second call server of all the traffic of the first call server;

terminating communications from the first call server over any connected signaling links; switching communications to signaling links connected to the second call server; and processing of the traffic by the second call server.

13. The method of claim 11, wherein the step of failing to receive a primary status message from the first call server over a first network after a first time period comprises failing to receive an IP heartbeat message from the first call server over an IP network after a first time period.

14. The method of claim 13, wherein the step of failing to receive a secondary status message from the first call server over a second network after a second time period comprises failing to receive an signaling message from the first call server over a signaling network after a second time period.

15. The method of claim 14, wherein the signaling message is an Signaling Connection Control Part (SCCP) message and the signaling network is an Signaling System 7 (SS7) network.

16. A method for providing redundancy for an entity in a telecommunications network, the method comprising:

transmitting a primary status message over a first network from a standby network entity to an active network entity;

determining that no primary status message has been received from the active network entity by the standby network entity over the first network;

transmitting a secondary status message over a second network from the standby network entity to the active network entity;

determining that no secondary status message has been received from the first active network entity by the standby network entity over the second network; and

initiating a switchover of traffic control from the active network entity to the standby network entity.

17. The method of claim 16 for providing redundancy for an entity in a telecommunications network, wherein the step of transmitting a primary status message over a first network from a standby network entity to an active network entity further comprises:

transmitting an IP message over an IP network from the standby network entity to the active network entity on a periodic basis.

18. The method of claim 17 for providing redundancy for an entity in a telecommunications network, wherein the step of determining that no primary status message has been received from the active network entity by the standby network entity over the first network further comprises:

determining that no primary status message has been received from the active network entity by the standby network entity over the first network after a first configurable time period.

19. The method of claim 18 for providing redundancy for an entity in a telecommunications network, wherein the step of transmitting a secondary status message over a second network from the standby network entity to the active network entity, further comprises:

transmitting the secondary status message over an signaling system 7 (SS7) network from the standby network entity to the active network entity on a periodic basis.

20. The method of claim 19 for providing redundancy for an entity in a telecommunications network, wherein the step of determining that no secondary status message has been received from the first active network entity by the standby network entity over the second network, further comprises:

determining that no secondary status message has been received from the first active network entity by the standby network entity over the second network after a second configurable time period.

21. The method of claim 20 for providing redundancy for an entity in a telecommunications network, wherein the step of initiating a switchover of traffic control from the active network entity to the standby network entity, further comprises:

terminating communications to the active network entity over any connected signaling links; and

switching communications to signaling links connected to the standby network entity.

22. The method of claim 21 for providing redundancy for an entity in a telecommunications network, wherein the active network entity and the standby network entity are in geographically different locations.